

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method of maintaining bandwidth capacity of a network comprising:

defining future times at which a bandwidth capacity of the network is evaluated;

determining a total bandwidth capacity of the network (TNC) at each of the future times;

determining a total demand of users (TUD) for the network at each of the future times;

determining, by a processor, a predicted utilization (PU) of the network at each of the future times as a function of the total demand of users (TUD) and the total bandwidth capacity of the network (TNC);

defining a maximum acceptable utilization and a minimum acceptable utilization of the network at each of the future times;

comparing, by a processor, the predicted utilization (PU) of the network to the maximum and minimum acceptable utilization of the network at each of the future times;

based upon said comparing, defining an adjusted predicted utilization (APU) at each of the future times, said defined APU being between the maximum and minimum acceptable utilization of the network;

~~determining in response to the comparing, for each future time, a change in total network bandwidth capacity (DCNC) to be applied to the network in order to increase or decrease the total bandwidth capacity of the network~~ to maintain the defined APU;

determining at each of the future times a lead time for adding a product for applying the determined DCNC to the network, wherein the lead time indicates an amount of time needed for delivery and installation of purchased DCNC; and

applying the determined DCNC in advance of each of the future times based on the lead time determined with respect to the future times.

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (previously presented) The method of claim 1 wherein determining a total bandwidth capacity of the network (TNC) at each of the future times is a function of determining a present bandwidth capacity of the network (PNC) and identifying a planned change in network bandwidth capacity (PCNC) to be applied the network between a present time and each of the future times.

7. (previously presented) The method of claim 1 wherein determining a change in network bandwidth capacity (DCNC) is a function of one or more of the following: a current utilization (CU) of the network, a growth trend of a utilization of the network, or a cost measure of a bandwidth capacity to be added to the network.

8. (previously presented) The method of claim 7 wherein said current utilization (CU) of the network is indicative of a high percent usage of a present bandwidth capacity of the network (PNC) for a particular percentage of time.

9. (original) The method of claim 7 wherein the growth trend is based on a regression of data representative of a past growth of the utilization of the network.

10. (original) The method of claim 1 wherein determining a total demand of users (TUD) for the network at each of the future times is a function of determining a present demand of users (PUD) for the network and determining a change in demand of users (CUD) for the network between a present time and each of the future times.

11. (original) The method of claim 10 wherein determining an anticipated change in demand of users (CUD) for the network comprises determining a demand requirement for a roll-out of an application operating via the network.

12. (previously presented) The method of claim 1 wherein determining a predicted utilization (PU) of the network at each of the future times comprises dividing the total demand of users (TUD) for the network by the total bandwidth capacity of the network (TNC) at each of the future times.

13. (original) The method of claim 1 wherein the acceptable utilization of the network is a function of a response time of an application operating via the network.

14. (original) The method of claim 13 wherein the response time of the application is a function of one or more of the following: a distance between a client and a server of the application wherein said client and server are coupled to the network, a connection speed of the client to the network, or a utilization of the network during a period of time at which the client accesses the application.

15. (previously presented) The method of claim 1 further comprising planning a budget for applying the determined change in network bandwidth capacity (DCNC) to the network and determining a cost measure of the determined change in network bandwidth capacity (DCNC).

16. (canceled)

17. (currently amended) A system to maintain bandwidth capacity of a network, said system comprising a processor configured to execute computer-executable instructions to:

define future times at which a bandwidth capacity of the network is evaluated;

determine a total bandwidth capacity of the network (TNC) at each of the future times;

determine a total demand of users (TUD) for the network at each of the future times;

determine a predicted utilization (PU) of the network at each of the future times as a function of the total demand of users (TUD) and the total bandwidth capacity of the network (TNC);

define a maximum acceptable utilization and minimum acceptable utilization of the network at each of the future times;

compare the predicted utilization (PU) of the network to the maximum and minimum acceptable utilization of the network at each of the future times;

define an adjusted predicted utilization (APU) at each of the future times, said defined APU being between the maximum and minimum acceptable utilization of the network;

determine, for each future time, a change in total network bandwidth capacity (DCNC) to be applied to the network in order to increase or decrease the total bandwidth capacity of the network to maintain the defined APU;

determine at each of the future times a lead time for adding a product for applying the determined DCNC to the network, wherein the lead time indicates an amount of time needed for delivery and installation of purchased DCNC; and

apply the determined DCNC in advance of each of the future times based on the lead time determined with respect to the future times.

18. (canceled)

19. (canceled)

20. (canceled)

21. (canceled)

22. (previously presented) The system of claim 17 wherein said computer-executable instructions to determine a total bandwidth capacity of the network (TNC) at each of the future times comprises computer-executable instructions to determine a present bandwidth capacity of the network (PNC) and to identify a planned change in network bandwidth capacity (PCNC) to be applied to the network between a present time and each of the future times.

23. (previously presented) The system of claim 17 wherein said computer-executable instructions to determine a change in network bandwidth capacity (DCNC) comprises computer-executable instructions to determine one or more of the following: a current utilization (CU) of the network, a growth trend of a utilization of the network, or a cost measure of a bandwidth capacity to be added to the network.

24. (previously presented) The system of claim 23 wherein said current utilization (CU) of the network is indicative of a high percent usage of a present bandwidth capacity of the network (PNC) for a particular percentage of time.

25. (original) The system of claim 23 wherein the growth trend is based on a regression of data representative of a past growth of the utilization of the network.

26. (original) The system of claim 17 wherein said computer-executable instructions to determine a total demand of users (TUD) for the network at each of the future times comprises computer-executable instructions to determine a present demand of users (PUD) for the network and to determine an anticipated change in demand of users (CUD) for the network between a present time and each of the future times.

27. (original) The system of claim 26 wherein said computer-executable instructions to determine an anticipated change in demand of users (CUD) for the network comprises computer-executable instructions to determine a demand requirement for a roll-out of an application operating via the network.

28. (previously presented) The system of claim 17 wherein said computer-executable instructions to determine a predicted utilization (PU) of the network at each of the future times comprises computer-executable instructions to divide the total demand of users (TUD) for the network by the total bandwidth capacity of the network (TNC) at each of the future times.

29. (original) The system of claim 17 wherein the acceptable utilization of the network is a function of a response time of an application operating via the network.

30. (original) The system of claim 29 wherein the response time of the application is a function of one or more of the following: a distance between a client and a server of the application wherein said client and server are coupled to the network, a connection speed of the client to the network, or a utilization of the network during a period of time at which the client accesses the application.

31. (previously presented) The system of claim 30 further comprising computer-executable instructions to plan a budget for applying the determined change in network bandwidth capacity (DCNC) to the network and to determine a cost measure of the determined change in network bandwidth capacity (DCNC).

32. (currently amended) A computing system with a processor having computer-executable instructions to perform a method to maintain bandwidth capacity of a network, the method comprising:

defining future times at which a bandwidth capacity of the network is evaluated;

determining a total bandwidth capacity of the network (TNC) at each of the future times;

determining a total demand of users (TUD) for the network at each of the future times;

determining a predicted utilization (PU) of the network at each of the future times as a function of the total demand of users (TUD) and the total bandwidth capacity of the network (TNC);

defining a maximum acceptable utilization and a minimum acceptable utilization of the network at each of the future times;

comparing the predicted utilization (PU) of the network to the maximum and minimum acceptable utilization of the network at each of the future times;

based on said comparing, defining an adjusted predicted utilization (APU) at each of the future times, said defined APU being between the maximum and minimum acceptable utilization of the network;

~~determining in response to the comparing~~, for each future time, a change in total network bandwidth capacity (DCNC) to be applied to the network in order to increase or decrease the total bandwidth capacity of the network to maintain the defined APU;

determining at each of the future times a lead time for adding product for applying the determined change in network bandwidth capacity (DCNC) to the network; and

applying the determined DCNC in advance of each of the future times based on the lead time determined with respect to the future times.

33. (canceled)

34. (canceled)

35. (previously presented) The computing system with a processor of claim 34 wherein the lead time is a function of an

installation time for installing said product and an advance purchase time for obtaining said product.

36. (previously presented) The computing system with a processor of claim 32 wherein determining a total bandwidth capacity of the network (TNC) at each of the future times is a function of determining a present bandwidth capacity of the network (PNC) and identifying a planned change in network bandwidth capacity (PCNC) to be applied the network between a present time and each of the future times.

37. (previously presented) The computing system with a processor of claim 32 wherein determining a change in network bandwidth capacity (DCNC) is a function of one or more of the following: a current utilization (CU) of the network, a growth trend of a utilization of the network, or a cost measure of a bandwidth capacity to be added to the network.

38. (previously presented) The computing system with a processor of claim 32 wherein determining a total demand of users (TUD) for the network at each of the future times is a function of determining a present demand of users (PUD) for the network and determining a change in demand of users (CUD) for the network between a present time and each of the future times.

39. (previously presented) The computing system with a processor of claim 32 wherein determining a predicted utilization (PU) of the network at each of the future times comprises dividing the total demand of users (TUD) for the network by the total bandwidth capacity of the network (TNC) at each of the future times.

40. (previously presented) The computing system with a processor of claim 32 wherein the acceptable utilization of the network is a function of a response time of an application operating via the network.



41. (previously presented) The computing system with a processor of claim 32 wherein the method further comprises planning a budget for applying the determined change in network bandwidth capacity (DCNC) to the network and determining a cost measure of the determined change in network bandwidth capacity (DCNC) .

42. (previously presented) The method of claim 15 wherein determining a cost measure of the determined change in network bandwidth capacity comprises determining a monetary cost measure of the determined change in network bandwidth capacity by analyzing past trends of cost increases or decreases for networks of similar size, distance, and location.

43. (original) The method of claim 1 wherein the future times are on fixed time intervals.

44. (original) The system of claim 17 wherein the future times are on fixed time intervals.

45. (original) The computing system of claim 32 wherein the future times are on fixed time intervals.